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Cooperative ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 5 January 14, 1955 No. 2

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

Light infestation of GREENBUG in Texas Panhandle area. None found in southwest Missouri. (page 23).

Abundance of eggs of potato-infesting APHIDS in northeastern Maine. (page 24).

BEET LEAFHOPPER population heavy and widespread in Zavala County, Texas. (page24).

A FLY LARVA (Cuterebra sp.) taken from neck of small child in Seattle, Washington. (page 25).

A cyst-forming NEMATODE, new to United States, reported from North Carolina. (page 36).

Summary of INSECT CONDITIONS - 1954 - In Louisiana (page 27) and Nebraska. (page 30).

The YELLOW CLOVER APHID on alfalfa in 1954. (page 37).

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Reports in this issue are for the week ending January 7, 1955, unless otherwise designated.

WEATHER FOR THE WEEK ENDING JANUARY 10, 1955

Last week's weather was unseasonably mild east of the Great Plains, but generally colder than normal west of the Continental Divide. Precipitation was heavy along the Pacific Coast, in Arizona, a belt extending from southeastern Nebraska and eastern Kansas to the Appalachians, and in another area including western Alabama, Mississippi, Louisiana, eastern and parts of northwestern Texas, and also over northern Maine. Elsewhere amounts were generally light to very light, with none measurable reported in central Montana and along the Atlantic Coast south of Virginia. Subzero minima occurred on several mornings east of the Cascade and Sierra Nevada Mountains to the western Great Plains, with an extreme low of -41° at Bondurant, Wyo. about midweek. Freezing occurred on the West Coast as far south as Santa Maria, Calif., and on several mornings in the Central Valley of the State, but no important crop damage was reported. Temperatures for the week averaged over 9° above normal in the central Mississippi and lower Ohio Valleys and generally 5° or more in the remainder of the eastern half of the Country. Subzero minima occurred on only 1 or 2 days and were limited to scattered sections in the extreme North. No freezing occurred at all in much of the Southeast. This was the eighth consecutive abnormally mild week in the extreme northern portions of the Great Plains.

Midwestern rains falling on the first 3 or 4 days of the period totaled from 1 to over 2 inches in eastern Kansas, southern Iowa, the northern two-thirds of Missouri, and most of Illinois, Indiana, and Ohio. Falling on unfrozen ground, these rains penetrated the soil replenishing ground water and subsoil moisture and causing considerable runoff in several sections. In Indiana slight overflow was occurring along the Wabash River as far south as Terre Haute. Rains in the central Gulf States, falling at the end of the period and totaling from 1 to over 2 inches were very beneficial, and topsoil moisture is now generally adequate from the lower Mississippi Valley eastward. Subsoil moisture is still low, however, in the southern portions of Alabama and Georgia, and northwestern Florida where the 1954 rainfall was deficient by 15 to 20 inches or more. In the lower Great Plains the moisture situation has been improved, somewhat, by recent rains and snows, but in the western portions more is still needed. Snowfall east of the Mississippi was mostly limited to light amounts or flurries in the extreme North, where the only important snow cover existed. The cover is adequate for winter sports in northern New England. Light to moderate snow fell

(Weather continued on page 26)

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - MISSOURI - No greenbugs found in small grain fields surveyed in southwest area. (Kyd, Thomas). TEXAS - General light infestations over most of Panhandle area; medium infestations in small areas. Randall and Briscoe Counties have 0 to 10 greenbugs per foot of row. All fields inspected had greenbugs,none over 5 per foot of row, in Carson, Hutchinson, Moore, Sherman, Dallam and Hartley Counties, with high predator-greenbug ratio. Five to 10 per foot in Castro, Parmer and Deaf Smith Counties. Swisher County had 25-75 greenbugs per foot of row, heaviest in irrigated wheat near Tulia. (Ashdown, Cleveland, Daniels).

APHIDS - TEXAS - Light to medium heavy infestations of several species on legumes in College Station area. (Siddall). Very heavy populations of an aphid (prob. Myzocallis trifolii) on alfalfa in Panhandle area (Ashdown, Cleveland, Daniels).

PEA APHID (Macrosiphum pisi) TEXAS - Low populations, 1-5 per foot of row, in several locations of Panhandle area. (Ashdown, Cleveland, Daniels).

COWPEA APHID (Aphis medicaginis) - TEXAS - Light infestations on clover near Waco. (Randolph, Davis).

ENGLISH GRAIN APHID (Macrosiphum granarium) - MISSOURI - Very low numbers in 20 percent of small grain fields surveyed in southwest area. All infested fields averaged less than 1 aphid per foot of drill row. (Kyd, Thomas).

A WINTER GRAIN MITE (Penthaleus major) - MISSOURI - Very low numbers in approximately 80 percent of barley fields in southwest area. From 1 to 13 mites, average 3, per foot of drill row. (Kyd, Thomas). TEXAS - Scattered medium to heavy infestations on small grains from Decatur east to Greenville and south to Marlin. Most general heavy infestations in the Denton, south of Dallas and Fort Worth, and Marlin-Waco areas. (Chada, Davis).

CLOVER LEAF WEEVIL (Hypera punctata) - MISSOURI - One field of three examined in Howard and Cooper Counties showed considerable leaf feeding damage. Average 3 larvae per crown. (Kyd, Thomas).

CLOVER SEED CHALCID (Bruchophagus gibbus) - UTAH - Samples of alfalfa seed from the "delta area" collected in fall of 1954 show infestation of 2 to 45 percent, with average of 18.4 percent. Based on estimate of 10,000,000 pounds of alfalfa seed produced in Utah during 1954 at current market price, this would be a loss of approximately $672,000. This assumes a price to seed growers averaging about 36.5 cents per pound. (Lieberman, Knowlton).

TRUCK CROP INSECTS

VEGETABLE WEEVIL (Listroderes costirostris obliquus) - NORTH CAROLINA - Reported from New Hanover County. (Scott). FLORIDA - Larvae damaging 10 percent of turnips at Quincy. Control measures being used. (May). SOUTH CAROLINA - Abundant around edges of turnip and spinach plantings at Charleston. Larvae causing slight injury. (Cuthbert).

TURNIP APHID (Rhopalosiphum pseudobrassicae) - SOUTH CAROLINA - Moderate infestation on young cabbage in Charleston area, moderate to heavy on turnips and mustard. Winged forms unusually abundant. (Cuthbert).

GREEN PEACH APHID (Myzus persicae) - SOUTH CAROLINA - Moderate and increasing population on spinach in Charleston area. Also present on young cabbage plants. (Cuthbert).

BEET LEAFHOPPER (Circulifer tenellus) - TEXAS - Heavy widespread infestation on beets, spinach, tomatoes and carrots in Zavala County. Leafhoppers averaging as many as 30 or more per 100 sweeps in young spinach and carrots. Much spinach virus prevalent and severe. (Richardson).

Abundance of Aphid Eggs on Overwintering Hosts of Potato-Infesting Aphids in Northeastern Maine

A survey was conducted in northeastern Maine from November 2 to 5, 1954 to determine the abundance of viable aphid eggs on the more important primary hosts of three species of potato-infesting aphids. As usual, buckthorn aphid eggs, Aphis nasturtii (=abbreviata), were found on alder buckthorn (Rhamnus alnifolia), at all sampling stations. Overall abundance of the eggs at these stations is but 88 percent as large as at the same time in 1953, but 1-1/3 times as large as the average for the preceding 10-year period. Present egg populations likely are large enough to produce potentially serious early-season populations of the buckthorn aphid, however. Aphid eggs on Canada plum (Prunus nigra) - a primary host of green peach aphid (Myzus persicae) - are 93 percent as abundant as at same time in 1953, but 19 percent more abundant than for the 10-year average. Eggs were found in 63 percent of the Canada plum thickets compared with 67 percent in 1953. The 1954 fall counts of aphids breeding on this plum in 18 thickets disclosed presence (light numbers) of green peach aphid in only seven. On basis of past experience it would appear that only very small numbers of green peach aphid can be expected to infest potatoes in 1955. Aphid egg populations beside buds and in limb crotches of swamp rose (Rosa palustris) - the most important primary host of the potato aphid (Macrosiphum solanifolii) - are 43 percent as large as at the same time in 1953, and 38 percent as large as the 10-year average for this time of year. Observations and counts subsequent to the survey, however, disclosed unusually large numbers of eggs at some stations on spines and bark of the rose trunks near the soil line. On the basis of this and other considerations, it would appear that overall egg abundance of the potato aphid on swamp rose is considerably larger than might be expected on the basis of bud and crotch counts only.

The hurricanes of August 31 - September 1 and of September 11 markedly reduced the populations of aphids on potatoes and on primary hosts and undoubtedly destroyed many fall migrants enroute to primary hosts. The adverse effects were likely larger in the instances of the potato and green peach aphids than the buckthorn aphid. (Shand, Simpson, Wave).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

CAMELLIA SCALE - DELAWARE -
Found on a Chinese holly in a Georgetown nursery December 17. One plant infested. Source of the infestation has not been determined. (Milliron).

INSECTS AFFECTING MAN AND ANIMALS

A FLY LARVA (Cuterebra sp.) - WASHINGTON - Taken from an apparently painless papular lesion on side of the neck of a one-year-old boy in Seattle, August 1954. This is a rare occurrence, apparently the third such case on record. (James).

CATTLE LICE - MISSOURI - Reports of high populations, particularly on cattle in feed lots, from northwest area. (Kyd, Thomas).

CATTLE GRUBS (Hypoderma spp.) - MISSOURI - Reports of high numbers in backs of cattle from all southwest counties. (Kyd, Thomas).

STORED-PRODUCTS INSECTS

RICE WEEVIL (Sitophilus oryza) - SOUTH CAROLINA - Survey of farm bins in Florence area shows less than 5 percent infestation in corn. (Kirk).

CLOTHES MOTHS - UTAH - Extensive injury to woollens in two large storage rooms at Logan. (Knowlton).

MISCELLANEOUS INSECTS

CLOVER MITE (Bryobia praetiosa) - NORTH CAROLINA - Heavy infestations in Stokes, Person, and Yadkin Counties. (Jones). MARYLAND - One report in Montgomery County. (U. Md., Ent. Dept.).

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Annoying in several communities. (Knowlton). MARYLAND - Concern in homes in Queen Annes and Prince Georges Counties. (U. Md., Ent. Dept.).

BROWN-BANDED ROACH (Supella supellectilium) - NORTH CAROLINA - Heavily infesting homes at Reidsville. (Ashton).

Weather(continued)

over most of the far western Interior early in the week, and 2 to 6 inches of new snow over eastern Washington and some other northwestern sections on the 9th. Also on the 9th snow fell over parts of Texas, Oklahoma, northern Arkansas, and southern Missouri. Up to 6 inches were on the ground in southeastern Oklahoma, and 1 to 10 inches in northwestern Arkansas on the morning of the 10th. Snow was still falling in southern Missouri, with 4 inches predicted by night. (Summary Supplied by U. S. Weather Bureau).

SUMMARY OF INSECT CONDITIONS - 1954

LOUISIANA

Compiled by E. C. Burns

Cereal and Forage Insects

ARMYWORM (Pseudaletia unipuncta) populations were heavy in small grains along upper Mississippi delta in April but the alertness of county agents and farmers kept crop damage at a minimum. Peak moth flights at light traps in the area preceded field infestation by approximately 10 days. Much higher flight peaks were recorded in the same light traps during early September but correspondingly heavy larval infestations did not develop in fields. Damaging early infestations of FALL ARMYWORM (Laphygma frugiperda) did not develop in rice as in 1953. Infestations of other crops were widely scattered and comparatively light until late season when pastures and fall-planted oats in several areas required control measures. SUGARCANE BORER (Diatraea saccharalis)was found damaging rice in several fields in Calcasieu, St. Landry and Plaquemines Parishes. The RICE WATER WEEVIL (Lissorhoptrus simplex) and RICE STINK BUG (Solubea pugnax) were widespread and heavy throughout most of the rice belt in 1954. CORN EARWORM (Heliothis armigera) caused extremely heavy damage to clovers, particularly crimson, in localized areas in several sections during early spring. VARIEGATED CUTWORM (Peridroma margaritosa) caused heavy damage to clover and alfalfa in local areas over most of the State. The IMPORTED FIRE ANT (Solenopsis saevissima v. richteri) has become a serious pest in pastures in several southern and central sections. In many cases mounds built by the pest were so numerous mowing or clipping of the pastures was almost impossible.

Sugarcane Insects

SUGARCANE BORER was a serious problem in 1954, just as in 1952 and 1953. A heavy carryover of overwintering borers as a result of mild winters has been the principal contributing factor to the generally heavy infestation the past three years. An extensive control program involving cultural practices and biological and chemical control reduced harvesttime losses much below what was expected. About 80,000 acres of cane and corn were dusted in the cane area in 1954. The SUGARCANE BEETLE(Euetheola rugiceps) appeared in greater numbers in 1954 than in any year since 1940. A number of localized areas of cane were seriously damaged by beetles. Deadhearts caused by beetle feeding were apparent on the more sandy soils throughout the sugarcane district. Since cryolite was not used extensively in dusting for control of second generation borers, heavy infestations of the YELLOW SUGARCANE APHID (*Sipha flava*) did not build-up as was the case in 1953.

Cover Crop Insects

PEA APHID (*Macrosiphum pisi*) and COWPEA APHID (*Aphis medicaginis*) distribution was general and unusually heavy on vetches, alfalfa and winter peas. Early season infestations of VELVETBEAN CATERPILLAR (*Anticarsia gemmatilis*) did not develop as expected on soybeans in the cane belt; however, scattered or localized infestations were reported from other areas in late August and September. BEAN LEAF BEETLE (*Cerotoma trifurcata*), THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*), GRAPE COLASPIS (*Colaspis* sp.) and CUCUMBER BEETLES were generally destructive to cover crops.

Truck Crop Insects

The estimated damage caused by the SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) was higher than in a number of years. Damage to sweetpotatoes from soil-inhabiting insects such as BANDED CUCUMBER BEETLE (*Diabrotica balteata*), WHITE GRUBS and WIREWORMS was unusually heavy in many fields and caused great crop losses. The SWEETPOTATO LEAF ROLLER (*Pilocrocis tripunctata*) and a LOOPER (*Pseudoplusia rogationis*) were destructive to foliage in many places in the commercial growing areas. SWEETPOTATO FLEA BEETLE (*Chaetocnema confinis*) developed slowly but damaging infestation occurred in mid and late season. Very heavy populations of SOUTHERN GARDEN LEAFHOPPER (*Empoasca solana*) developed on sweetpotatoes late in the season. A NITIDULID (*Lobiopa insularis*) caused grave concern in the strawberry belt. Its presence was instrumental in the premature closing of several packing plants. Survey indicated that heavy infestations were associated with grassy fields and abundance of overripe fruit left in fields due to improper picking. TOMATO FRUITWORM (*Heliothis armigera*) infestation was heavy in the southern truck crop area. BLACK and GRANULATE CUTWORMS (*Agrotis ypsilon* and *Feltia subterranea*) were extremely numerous and destructive to tomatoes, cabbage, sweet corn and other vegetable crops throughout most of the State with the northern area being most severely affected. Most flights observed at light traps in northeast Louisiana were correspondingly heavy during this period. CORN EARWORM infestations on sweet corn were heaviest recorded for Louisiana. As many as 10 live larvae per ear were not uncommon.

Stored Grain Insects

An average of samples collected from the major corn growing areas of the State showed 4. 8 percent damage due to stored grain pests. RICE WEEVIL (Sitophilus oryza) was responsible for practically all this damage. These samples were comprised of several varieties of corn. The average represents the infestation as taken from the field and is about normal for the State. An early survey of rice warehouses gave an average of .18 percent damage due to stored grain insects with damage approximately equally divided between the RICE WEEVIL and the ANGOUMOIS GRAIN MOTH (Sitotroga cerealella). A later survey of warehouses in three of the largest rice growing parishes showed 70 percent infested in varying degrees. Infestations were mostly moderate. Most abundant insects were CONFUSED FLOUR BEETLE (Tribolium confusum), ANGOUMOIS GRAIN MOTH and RICE WEEVIL.

Cotton Insects

BOLL WEEVIL (Anthonomus grandis) - Adverse climatic conditions caused replanting of a large portion of the cotton crop thus providing in many cases young and old cotton for development of the boll weevil. Extreme drought particularly in the northern part of the State no doubt was instrumental in checking development of the insect; however, in spite of the drought, heavy infestations developed in many areas. Heavy infestations were common in the central and southwestern areas during mid and late season. Scattered damaging outbreaks occurred over the State during this time. Heavy infestations were difficult to reduce with insecticides possibly because of excessive temperatures, low humidity and persistent high wind velocities. BOLLWORM (Heliothis armigera) infestations were heavy and general. Moth activity was unusually heavy in many areas and in some untreated fields parasites and predators were unable to check infestations. As usual improper insecticide control programs contributed to the development of damaging infestations. COTTON APHID (Aphis gossypii) infestations were spotted over most of State but populations were unusually heavy and difficult to control in the southwestern area. The unusually dry weather was ideal for development of SPIDER MITES (Tetranychus spp.) and distribution and damage was greater than for a number of years. First specimen of BROWN COTTON LEAFWORM (Acontia dacia) was taken at a mercury vapor light trap in Natchitoches Parish August 19. On October 12 larvae were abundant in several fields in Natchitoches Parish and a light infestation was found in southern Red River Parish. The species was not found or reported in other areas of the State.

Insects Affecting Man and Animals

IMPORTED FIRE ANT has spread over a large part of the State. In 1954 it was so abundant in the southeastern area that several control demonstrations were conducted. SCREW-WORM (Callitroga hominivorax) infestations were especially heavy in central and southern areas in early August. MOSQUITOES (predominantly Aedes spp.) were much more abundant than usual in southern area. A heavy outbreak which occurred in late September, along the coastal parishes, seriously hindered livestock activity. In some areas cattle were forced into water where available to avoid the pests.

SUMMARY OF INSECT CONDITIONS - 1954

NEBRASKA

Reported by R. E. Roselle
and R. E. Hill

Field Crop Insects

EUROPEAN CORN BORER (Pyrausta nubilalis) populations were highest on record for the State. Infestations were heavy to severe in many northeastern areas. Climatic conditions generally were favorable for first generation egg deposition, hatching and larval survival. By July 24, pupation had reached 50 percent in southern Nebraska, and 30 percent in northern counties. By July 31, first-generation larvae were 80 percent pupated in central Nebraska and 60 percent in northern counties. Second-generation moths were flying to lights the week of July 19 in Lancaster County. Egg mass counts ranged from 2 to 32 per 100 plants in east-central Nebraska by July 31. The second generation egg-laying period which lasted nearly two months may have been caused by low temperatures during August, also by abnormal heavy rainfall. A heavy second generation developed in most counties of eastern and central Nebraska. Infestations causing as much as 5 percent loss occurred as far west as Dawson County. Second-generation larvae reached an average of 566 borers per 100 stalks in 15 counties of northeast district; 401 borers per 100 stalks in the east central area; 156 borers per 100 stalks in south-central counties; 51 borers per 100 stalks in the southeast. The total estimated loss in the surveyed counties was $28,000,000. This sum would be greater if the non-surveyed counties were included.

GRASSHOPPERS - crop species: The infestation was local, from light to very severe and chiefly in alfalfa, clover, pastures and corn margins. The infested area included the eastern third of the State, a small area of Redwillow, Furnas, Harlan, and Phelps Counties in south-central Nebraska, and Dundy and Hitchcock Counties in southwest Nebraska. The predominant species was *Melanoplus femur-rubrum* in eastern area. *M. differentialis* infestations were very local, and only a few *M. mexicanus* were present in the southeast counties. Range species: A local threatening infestation was located in Hooker County, and generally light to threatening infestations along the North Platte River in Scotts Bluff, Morrill, Garden, Arthur, Keith, Banner, and south-central Kimball Counties. A threatening infestation appeared in Lincoln, Logan, and McPherson Counties. A light infestation appeared in Cherry County. ARMY CUTWORM (*Chorizagrotis auxiliaris*) was first observed in Lancaster County during March. Contrary to expectations, no important outbreaks were recorded from western Nebraska, but this insect did severely damage many alfalfa fields in the southeastern third of the State. Localized heavy infestations of PALE WESTERN CUTWORM (*Agrotis orthogonia*) occurred in Kimball, Banner, and Cheyenne Counties. Many adults were collected in the fall of 1954. Continued trouble likely from this species in wheat in the southwestern pan-handle counties in 1955.

VARIEGATED CUTWORM (*Peridroma margaritosa*) caused localized damage to alfalfa and pasture in several eastern counties in June. Larvaevorid parasites were very active, resulting in a high percentage of natural control. CUTWORMS (probably *Euxoa detersa*) caused 30 percent or more loss in corn fields of Logan and portions of surrounding counties. All damage was to corn in sandy soil. Moderate to heavy scattered infestations of BLACK CUTWORM (*Agrotis ypsilon*) occurred in low portions of fields and river bottom fields of eastern Nebraska. Infestations appeared to be less severe than in 1953. Isolated heavy infestations of BROWN WHEAT MITE (*Petrobia latens*) were present in western Nebraska during April and May. Some fields were slightly damaged. PEA APHID (*Macrosiphum pisi*) infestations first occurred in alfalfa during late April. Populations developed during May and June to damaging , although not severe, proportions in most areas producing alfalfa and red clover. SWEETCLOVER WEEVIL (*Sitona cylindricollis*) populations were heavy in second-year sweetclover in eastern Nebraska in late April. Severe damage was general in first-year sweetclover in scattered locations in most eastern counties. Many stands were lost in 1954.

Field corn was heavily infested by CORN EARWORM (*Heliothis armigera*) in tassel whorls throughout southeast and south-central counties early in June. Moth flights were noticed in May, earlier than normally expected. Climatic conditions were favorable during the summer for development of earworms. Several generations were produced and all stages were present until frost. Damage to ears was severe in nearly all south and southcentral counties where surveys indicated almost 100 percent infestation of ears in September. In the heavily infested areas, losses ranged up to 10 to 25 percent of kernels. Infestations were much lighter in northeastern Nebraska. Heavy smut infections and other species of fungi added to the initial loss. CORN SAP BEETLES (*Carpophilus dimidiatus*) were present in injured ears, causing additional losses. SEED-CORN MAGGOT (*Hylemya cilicrura*) caused scattered damage in south and south-central Nebraska in May. Moderate damage resulted from MAIZE BILLBUG (*Calendra maidis*) in a few southeastern counties. A SOD WEBWORM (*Thaumatopsis pectinifer*) damaged corn in sandy soils of Madison County. HESSIAN FLY (*Phytophaga destructor*) infestations were very light. Scattered CORN ROOT APHID (*Anuraphis maidi-radicis*) infestations in central Platte Valley resulted in severe damage in a few fields.

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) damage was apparently limited to southern two rows of counties. All suspected damage light. Adults not as numerous as in 1953. CORN ROOTWORM(*D. longicornis*) maintained about normal levels. Damage was light to moderate in the east and northeast counties. Adults were numerous in most fields that had not been soil treated with an insecticide. WESTERN CORN ROOTWORM (*Diabrotica virgifera*) was present in all corn growing regions of the State. Heaviest populations in southern counties. Damage was not as severe as in 1952 and 1953. Severe damage was observed, however, in many untreated fields of the Platte Valley and eastern Republican Valley. ARMYWORM (*Pseudaletia unipuncta*) was first collected in early June intermingled with variegated cutworms. Early reports and specimens were received from Garfield, Box Butte, and Lincoln Counties. During August and September light to moderate infestations occurred in nearly all southern counties. Infestations did not reach outbreak proportions in any section of the State. Tachina fly parasites were abundant in all fields observed. FALL ARMYWORM (*Laphygma frugiperda*) was general in southern areas in and on corn ears, shanks and stalks. Infestations resulted in a moderate percentage of dropped ears at harvest time.

Although CORN LEAF APHID (Rhopalosiphum maidis) was generally light in field corn, milo in southern Nebraska was heavily infested during August and September. Some reduction in yields. ALFALFA WEEVIL (Hypera postica) adults were active during first part of April. Larvae caused only scattered light damage. No reported spread out of the known infested counties was received. SIX-SPOTTED LEAFHOPPER (Macrosteles fascifrons) was moderate to heavy in oats during May and June in eastern and southern counties. No cases of severe damage. Outbreak numbers of GARDEN WEBWORM (Loxostege similalis) occurred in southeast, south-central and central areas beginning in mid-June. Late corn was damaged in many instances and required reseeding. Alfalfa was generally infested. Subsequent generations were present all season, but in light to moderate numbers. ALFALFA PLANT BUG (Adelphocoris lineolatus) was moderate to heavy in alfalfa fields of most counties. ALFALFA WEBWROM (Loxostege commixtalis) was light in southwest counties. An unexpected heavy infestation of GREEN CLOVERWORM (Plathypena scabra) developed on soybeans in August in many southeast areas. This is first time this species has been serious in Nebraska.

Vegetable and Truck Crop Insects

BEET LEAFHOPPER (Circulifer tenellus) was picked up in small numbers from near Grand Island to Scottsbluff. This is the first positive identification of the presence of this species in the State. Curly top of sugar beets found in all beet growing areas. POTATO PSYLLID (Paratrioza cockerelli) appeared in small numbers in late May. Moderate to severe damage in central Nebraska commercial potato fields and garden plots in July. Psyllid yellows symptoms were showing on early potatoes in western Nebraska in mid-July. High populations were in untreated fields of tomatoes. Late potatoes were only lightly to moderately infested. Very high TUBER FLEA BEETLE (Epitrix tuberis) populations in mid-July occurred on some early potatoes in North Platte Valley. Populations generally seemed lower in late-planted fields. POTATO SCAB GNAT (Pnyxia scabiei) caused very severe damage in Keith County potato fields. First report of injury from scab gnat for Nebraska. POTATO LEAFHOPPER (Empoasca fabae) was abundant early in June and continued high in local areas throughout summer. SPIDER MITES (Tetranychus spp.) developed rapidly on vegetable plants after June 1 and continued high throughout summer. MEXICAN BEAN BEETLE (Epilachna varivestis) caused severe injury in a few fields of dry beans in Sioux and Scotts Bluff Counties during July. HARLEQUIN BUG (Murganita histrionica) was locally heavy in eastern Nebraska from early July until frost on cruciferous plants. A STRIPED BLISTER BEETLE (*Epicauta* sp.) was common on alfalfa and garden tomatoes and potatoes from mid-July until September. STRIPED CUCUMBER BEETLE (*Acalymma vittata*) caused severe damage to cucurbits in most counties of eastern and southern Nebraska. Wilt disease was very common. SQUASH BUG (*Anasa tristis*) was very numerous in gardens generally causing severe damage to cucurbits. Unusually large numbers of CORN EARWORM in sweet corn and tomatoes in all sections. COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) in garden potatoes of eastern Nebraska light but heavier than during 1953. APHIDS- *Aphis gossypii* severe on cucumbers and garden melons. *Macrosiphum pisi* occurred in very high numbers on garden peas in the early spring. IMPORTED CABBAGEWORM (*Pieris rapae*) populations built up rapidly during early summer, continuing throughout season.

Insects of Shade Trees, Perennials and Other Ornamentals

Heavy local infestation of EUROPEAN ELM SCALE (*Gossyparia spuria*) reported from western two-thirds of Nebraska. Moderate infestations in Omaha area. ELM BORER (*Saperda tridentata*) heavily infested American elms in many eastern areas causing serious damage. FLATHEADED APPLE TREE BORER (*Chrysobothris femorata*) infestations in pin oaks were general and in some cases severe in eastern Nebraska. SMALLER EUROPEAN BARK BEETLE (*Scolytus multistriatus*) infestations were found in several areas of eastern Nebraska. Heavy infestations at Fairbury (Jefferson County), and generally in Lincoln area. CLOVER MITES (*Bryobia praetiosa*) migrations into homes generally heavy. A PINE SAWFLY (*Neodiprion* sp.) caused severe damage to ponderosa pine in Madison, Cherry, and Antelope Counties. SOUTHERN MASKED CHAFER (*Cyclocephala immaculata*) infestations in lawns generally moderate to severe in southern and eastern counties. OYSTERSHELL SCALE (*Lepidosaphes ulmi*) on many host plants was heavy in the Lincoln-Omaha areas. BAGWORM (*Thyridopteryx ephemeraeformis*) populations were much heavier than normal in southeastern Nebraska. Severe damage to coniferous trees in many communities. Heavy infestation of WALNUT CATERPILLAR (*Datana integerrima*) caused defoliation of walnut trees in most northeastern counties. TWIG BEETLE (*Phloeosinus* sp.) damaged eastern red cedar in Sheridan County.

Insects Affecting Man and Animals

HOUSE FLY (Musca domestica) populations started an early build-up but were temporarily curtailed by hot, dry conditions during July. In August excessive moisture presented favorable breeding media resulting in large numbers of adults in rural and urban areas. Population trends of STABLE FLY (Stomoxys calcitrans) followed closely those of house fly. Excessive numbers of adults in rural areas during August and September, especially high in southeast and east Nebraska. HORN FLY (Siphona irritans) infestations occurred in May on range cattle, numbers increased during late spring on cattle in the sandhill region. Populations in eastern Nebraska were greater in mid-summer than in 1953. CATTLE GRUB (Hypoderma spp.) situation was normal. CATTLE LICE (Bovicola bovis, and Hematopinus spp.) - Higher populations in eastern Nebraska and in southwestern and south-central counties than last two years. Several species of MOSQUITOES developed unusually large populations in late summer and early fall in most areas. August rainfall caused more breeding places than normally exist in eastern Nebraska. The problem in irrigated areas was about same as in past years. One NORTHERN FOWL MITE (Bdellonyssus sylviarum) infestation reported in a home in Lincoln. Several chicken houses near Emerald apparently heavily infested with this mite. Populations of CHIGGERS (Eutrombicula alfreddugesi) in eastern and southern Nebraska were greater than the last two seasons.

Cooperators: The following Nebraska entomologists also contributed to the Cooperative Economic Insect Survey during 1954: H. J. Ball, O. S. Bare, E. W. Hamilton, L. W. Quate, R. Staples, R. L. Wallis and C. Walstrom.

A New Cyst-Forming Nematode in North Carolina

The following announcement, dated January 4, 1955, has been released by C. H. Brannon, State Entomologist, North Carolina Department of Agriculture.

"To the Plant Officials of the Forty Eight States

"This is to report that a new cyst forming nematode was found during the late summer of 1954 damaging soybeans in the Castle Hayne area of New Hanover County North Carolina. A grower reported damage to his soybeans and an investigation by a plant pathologist of the Vegetable Research Laboratory, Wilmington, N. C., was made. Cyst forming nematodes were found which have been tentatively identified by the pathologist at this laboratory and by the Section of Nematology, Plant Industry Station, Beltsville, Maryland as *Heterodera glycines* Ichinohe. The only previous records of this nematode are from Japan and China.

"Surveys have been made in other areas growing soybeans and to date none has been found except in the Castle Hayne area. In tests with other possible host plants only snap beans and soybeans were attacked.

"Personnel from the Golden Nematode Project have visited the area.

"Surveys are being continued and you will be advised of future developments."

THE YELLOW CLOVER APHID ON ALFALFA - 1954*

The yellow clover aphid, Myzocallis trifolii (also called Therioaphis ononidis), has been recorded extensively on clover in the United States. Until 1954, however, it was not known as a serious pest of alfalfa in this Country, although specimens had been taken on this crop at Pullman, Washington. Other states west of the Mississippi River recording this insect prior to 1954 include Iowa, Nebraska, Kansas and New Mexico. In 1954 New Mexico, Arizona, Nevada, and California had outbreak populations on alfalfa. Reports indicate that this was the only harvested crop attacked in these states; although, a few winged forms were noted on cotton in Arizona and migration to cotton fields from recently-cut alfalfa occurred in New Mexico. Specimens were also collected on California burclover (Medicago hispida) in California.

Myzocallis trifolii is a whitish-yellow species about one-half the size of the pea aphid. It differs from the pea aphid in its feeding habits on the alfalfa plant in that it forms colonies on the leaves, usually on the underside of the lower older leaves, while pea aphid colonies are found mostly on the terminal portion of the stems. Damage consists of defoliation of the lower part of the plant and heavy production of honeydew which often supports the growth of sooty molds. Fields heavily infested may be picked out immediately after cutting by the blackened condition of the crowns, however, such fields may appear green prior to cutting. Alfalfa from infested fields is of inferior quality and, where much honeydew is present, is impossible to dehydrate and difficult to cut and bale.

Development of Infestations

In New Mexico the aphid was first reported on new alfalfa early in the year from Valencia and Quay Counties. Serious damage to 5,000 acres, mostly new stands, in Pecos Valley was reported February 20. By the first of May this entire area had severe infestations in all alfalfa and farmers were cutting 10 days to two weeks early. During early May Guadalupe County reported infestation and Chaves and Eddy Counties had 45,000 acres heavily infested. Most of the spring seedings were killed or so badly injured in these two latter counties that replanting was necessary and damage was severe to both first and second cuttings. About this time the aphid showed up east of Mesquite, Dona Ana County, and by the end of June the entire Mesilla-Rincon Valley was infested. In this area the heaviest infestation occurred preceding the third cutting and yields were reduced materially. One grower with two-year old hay cut 250 tons of hay from a 350-acre field which the year before had produced 600 tons on third cutting. A check of this field revealed a reduction in stand of 60 percent. Populations were much reduced following the third cutting, but the aphid had built up again to damaging numbers by the last of September. At this time epidemic numbers were appearing again in the Pecos Valley and fall seedings were especially badly damaged.

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* This report compiled by Economic Insect Survey Section from special information supplied by R. C. Dobson, New Mexico; F. E. Werner, Arizona; S. Lockwood, California; and H. E. Gallaway, Nevada.

In Arizona the yellow clover aphid was severe in the major alfalfa areas in Yuma, Maricopa and Pima Counties and near Davis Dam, Mohave County. Infestations in the Yuma area first became noticeable about May 15 and continued heavy until July 19. The main build-up in Maricopa County appears to have come early in July. Heavily infested fields were found in Pima County near the end of June. By August populations had declined in all major alfalfa-producing areas of the State. In September scattered light to moderate infestations were reported, and in October build-ups were occurring at Yuma and in the Salt River Valley. Late in the year the aphid was causing considerable damage in new plantings and re-seeded fields in the Yuma area and was causing severe damage in Graham County where it was not a pest during the summer of 1954.

The aphid was found for the first time in California, February 7, 1954, on California burclover (Medicago hispida) in a yard at San Diego. During October heavy infestations occurred in alfalfa in the Borrego Valley of this county. Infestation became general and widespread on alfalfa near Brawley in Imperial County, late in June. In Riverside County, the species was serious and general on 8,000 acres of the crop in August in the Perris-Hemet area. It was also found on 8,000 acres of alfalfa in the Coachella Valley in October and by December damage was general in this area with at least 250 acres of newly-planted alfalfa being plowed under. In the Palo Verde Valley of this county all alfalfa, 24,000 acres, was infested by December 1. Light infestations were recorded from San Bernardino County in November and in Orange and Los Angeles Counties in December.

During September severe infestations developed on alfalfa in the Moapa Valley, Clark County, Nevada. This was the first record of this insect in the State. In most infested fields the aphid had disappeared by October 25.

Loss Estimates

In addition to honeydew damage and reduction in yields of established alfalfa, the yellow clover aphid was responsible for killing about 90 percent of spring-seeded stands and about 75 percent of the preceding fall-seeded stands in the Pecos Valley of New Mexico. It was also responsible for reducing the number of years an alfalfa stand will last in that area from four years to about two. After considerable discussion with growers and other interested parties, the loss in production throughout the portion of the State affected by this aphid has been estimated at approximately $4,000,000. This figure is an estimate only for loss of production and includes no other factors such as replacement costs for fields killed, loss of plantings, cost of controls, and many other factors for which no figures can be obtained.

In Arizona the third and fourth cuttings of alfalfa were severely reduced in Yuma and Maricopa Counties. Percentage loss has not been determined but J. N. Roney, Extension Entomologist, estimates that financial loss to the growers was around $500,000. Losses due to decreased vigor and reduction in seed production have not been computed.

Losses in various California counties having measurable damage are estimated as follows: Imperial $85,400, Riverside $250,000, San Diego $2,500, --State total, $337,900. These figures include loss in production of hay and seed and quality of hay, cost of treatment and replanting. In Nevada many alfalfa fields were severely damaged in Clark County, especially those planted in the spring of 1954. In some instances reduction of stands amounted to upwards of 80 percent.

Control

In New Mexico the following insecticides were tried for control of this pest: DDT, malathion, parathion, BHC, Systox, sulfur alone or in combination with BHC, DDT, and sulfur. All of these gave excellent cleanup except DDT which was slow and erratic. None gave control for more than 5 days in the Pecos with possible exception of Systox which lasted between 10 days and two weeks. Malathion kept fields clean in Rio Grande Valley for about three weeks, but unfortunately, this allowed time for reinfestation and considerable damage before cutting date. Of approximately 170,000 acres infested in New Mexico, probably half were treated one or more times. As high as seven applications were made in some instances. Figuring that half of the infested area was treated and each treated field received three applications total treated acreage would be 255,000 acres.

Several insecticides were tested on this aphid in Arizona by D. M. Tuttle at Yuma late in June and early July. The organic phosphates were all effective and have been recommended on hay alfalfa because of their short residual period. Five percent DDT, 15 percent toxaphene, 40 percent sulfur (5-15-40) dust proved as effective and has been recommended for seed crops because of its longer residual period and usefulness against other pests. An estimate of amounts of these materials used against the aphid in Arizona is not yet available. In many cases damage was so severe before it was detected that it was not economically feasible to apply chemical control measures.

Parathion at one-half pint per acre has given excellent results in California, but retreatment has often been necessary after two weeks in some fields. This makes cost of control exceptionally high. In limited control work against the pest in Nevada, very good results were obtained with 1-1/2 pints malathion emulsifier in 20 gallons of water per acre.

Populations of lady beetles were extremely heavy in some fields in Imperial County, California but seemed unable to cope with the situation. Preliminary examinations of alfalfa fields infested with the yellow clover aphid in Arizona indicate that populations of chrysopids, coccinellids, and syrphids increase when large numbers of the aphids are present.

Outlook and Current Activity

From indications late in October 1954, the yellow clover aphid threatens to be the most important insect in New Mexico again in 1955. Heavy populations at that time indicate early, serious infestation in alfalfa in the southern half of the State in the spring of 1955. At the end of the year the aphid was causing considerable damage at Yuma and in other areas of Arizona. Freezing temperatures in some locations had not caused decrease in populations. New winter growth of alfalfa was infested December 20 in southern California indicating the aphid can be expected to live and reproduce through the winter months in that area.

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